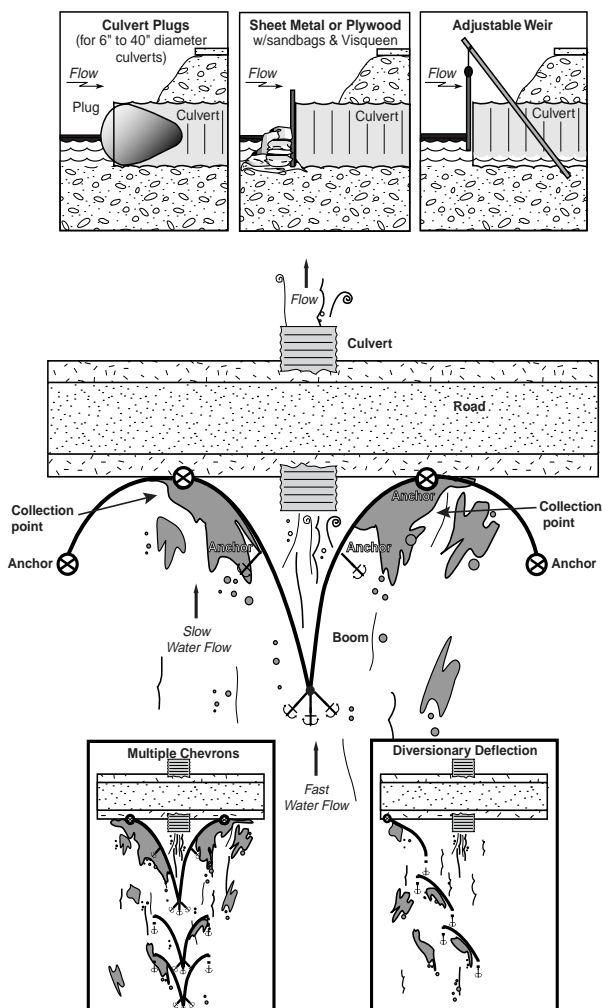


Drainage Protection



Drainage protection may be appropriate during breakup and summer when contaminants may be mobilized and water is flowing through culverts, or while using other treatment tactics such as flooding (Tactic T-1) or flushing (Tactic T-2). Drainage protection will keep contaminants from migrating off site in water moving through culverts.

A culvert can be blocked using sheet metal, plywood barriers, inflatable culvert plugs, or adjustable weirs. Plywood or sandbags can also be used as culvert blocks, but are more labor-intensive. Place blocking materials over the upstream end of the culvert. Plastic sheeting over the outside of the block will prevent water penetration. Use a full block only when blocking of the water will not threaten the road or back water up so that additional tundra becomes contaminated.

When blocking a culvert is inadvisable because of the likelihood of washing out the road or flooding upstream uncontaminated areas, boom may be deployed in either chevron or diversionary configurations to allow water to flow while deflecting oil from the mouth of a culvert to collection sites along the road.

APPLICABILITY

	APPLICABILITY	CONSIDERATIONS AND LIMITATIONS
SPILLED SUBSTANCE	All	<ul style="list-style-type: none"> Boom systems will not protect drainage from water-soluble contaminants.
TUNDRA TYPE	All	<ul style="list-style-type: none"> In dry tundra, consider need for drainage protection when flooding (Tactic T-1) or flushing (Tactic T-2).
SEASON	Spring, summer, and fall	<ul style="list-style-type: none"> Pay particular attention to drainage protection during breakup.

CONSIDERATIONS AND LIMITATIONS

- This tactic has been adapted from Tactics C-2 and C-3 in the *Alaska Clean Seas Technical Manual* (Alaska Clean Seas, 1999, Vol. 1).

EQUIPMENT, MATERIALS, AND PERSONNEL

- Boom (2 workers) – to deflect floating contaminants from culvert
- Anchor system (2 workers) – to secure boom system
- Visqueen (2 workers) – to prevent seepage through permeable culvert blocks
- Inflatable culvert plug (2 workers) – to block culvert
- Sheet metal or plywood barriers (2 workers) – to block culvert
- Sandbags (2 workers) – to block culvert
- Air compressor (1 worker) – to inflate culvert plug
- Flatbed truck (1 worker) – to transport sandbags
- Front-end loader (1 worker) – to unload sandbags